

SIMULIUM AMAZONICUM GOELDI, 1905
(DIPTERA, SIMULIIDAE): PROPOSED SUPPRESSION
OF SYNTYPES AND DESIGNATION OF NEOTYPE.
Z.N.(S.)2364

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The purpose of this request is to provide a reared female neotype of *Simulium amazonicum* Goeldi, 1905, in place of poorly preserved extant syntypes. The division of the *S. amazonicum*-group, which contains four vector species of two important human filariae in South America, into its constituent species is only possible on the basis of combinations of both pupal and adult characters. The whole concept of the *S. amazonicum*-group is therefore totally dependent on the correct identification of *S. amazonicum* based on a reared name-bearing specimen.

2. The name *S. amazonicum* was given by Goeldi, 1905, to female specimens collected by A. Ducke at Tefé on the river Solimões and by J. Huber from the rivers Purus and Acre in the Brazilian State of Amazonas. In his description Goeldi stated that a series of female 'cotypes' (syntypes in the modern sense) had been sent to the British Museum (Natural History) but made no mention of their exact provenance nor of any other type series.

3. A search for extant syntypes revealed the presence of two series in two depositories, the British Museum (Natural History) and the Naturhistorisches Museum Bern. Although Smart, 1942, referred to 38 female syntypes of *S. amazonicum* in the former, only 26 still remain. Of these, 20 are preserved in alcohol with a label written by Goeldi reading 'Piúm, Bom Lugar, (Purus). v. 1904.', another label by E.E. Austen: '*Simulium amazonicum* Goeldi. - Co-types, (The Piúm) Bom Lugar, Rio Purús, Amazons Region, Brazil. May, 1904. — Dr. J. Huber. Pres. by Dr. E.A. Goeldi. (Recd. 6-vi.1905)' and a registration number 'Brit. Mus. 1941: 19' added by Smart. All specimens are now reddened by prolonged preservation in alcohol and none shows any clear scutal pattern. The remaining six syntypes are also in poor condition and have been preserved in the following manner: two pinned specimens removed from alcohol by Smart, one of which is incomplete having its abdomen dissected on a slide; four specimens dissected on slides, two by Smart and two by me.

4. The other series of 27 pinned syntypes in the Naturhistorisches Museum, Berne, bears the following labels in Goeldi's handwriting: 'Piúm. Purús, schreckliche Landplage am Amazonsstrom' and 'An Austen in London British Museum

einsenden zum bestimmen trockenes & Spiritusmater'. All specimens are variously damaged and inadequate for identification purposes.

5. No complete and reliable description of *S. amazonicum* has yet been published. The only accurate redescription was that of Smart (1942), but this was incomplete as it was based on the British Museum (Natural History) syntypes which had already lost their colour because of prolonged alcohol preservation. The two main redescriptions on which most modern identifications of *S. amazonicum* have been based are those of Lutz and of Cerqueira and Nunes de Mello. Lutz's redescription (1910, 1917) of females and pupae collected by him are unreliable since no attempt was made correctly to associate individual pupae with adults and no attempt was made to study syntypes. These redescriptions are now known to be of two other species, distinct from, yet related to, *S. amazonicum*. Further confusion was caused in the same way when Cerqueira & Nunes de Mello, 1964, redescription *S. amazonicum* in all its stages from a mixture of three species (one of which was true *S. amazonicum*), again without reference to type material. This lack of a clear and correct definition of *S. amazonicum* has led to incorrect distribution records (Pinto, 1932; Vargas, 1945; Vulcano, 1967), its incorrect incrimination as a vector of *Mansonella ozzardi* in Brazil by Cerqueira, 1959 (he was dealing with another species in the *S. amazonicum*-group) and its incorrect incrimination as a vector of *Onchocerca volvulus* both in Brazil (Rassi *et al.*, 1975) and Venezuela (Rassi *et al.*, 1977).

6. I have been investigating the taxonomy of *S. amazonicum* and its allies in the Brazilian Amazon basin and the relation of these species to the transmission of the two human filariae *M. ozzardi* and *O. volvulus*. Although agreeing with past workers that blackflies transmit these two filariae in the Amazon, disagreement occurs over the identifications of the species involved. Thus Rassi *et al.*, 1975, incriminated *S. amazonicum* as a vector of onchocerciasis at Toototobi in northern Brazil, whereas Shelley *et al.*, 1979, tentatively attributed the species to *S. sanguineum* after comparing their material with the holotype of this species. However, when Tidwell *et al.* (in press, but since published) fully redescription *S. sanguineum*, it became apparent on pupal characters alone that the vector at Toototobi was not this species and it was then referred to as *S. sanguineum* s.l. by Shelley *et al.*, 1980. Similarly, Cerqueira, 1959, produced evidence that suggested that *S. amazonicum* might be a vector of *M. ozzardi* in Brazil while Shelley *et al.*, 1980, though confirming Cerqueira's suggestion, regarded the blackfly species as undescribed but related to *S. amazonicum*. These authors also showed that *S. amazonicum* is capable of transmitting mansonelliasis.

7. The cause of the lack of a definition for *S. amazonicum* is that only females are easily obtainable and these are difficult or often impossible to distinguish from closely related species without recourse to pupal characters. A subsequent study of all stages of these closely related species has shown the presence of a group of species, the *S. amazonicum*-group, which contains three anthropophilic and one zoophilic species in Brazil, and at least three other species, one of which is anthropophilic, from neighbouring countries. Although some of the species are separable on the design of the female scutum alone, in most cases reference to the pupa is essential before identification can be made.

8. As at least four species in the *S. amazonicum*-group are involved in the transmission of both onchocerciasis and mansonelliasis in various countries in northern South America, and as their distribution in some cases overlaps, it is essential for future epidemiological studies of these diseases and their transmission that vectors may be identified with certainty. This can only be done at present in most cases on reared material. The naming of these species has hinged on the acceptance of a reared female *S. amazonicum* from its type locality as neotype.

9. The International Commission on Zoological Nomenclature is therefore asked:

- (1) to use its plenary powers:
 - (a) to suppress all the original syntypes of *Simulium amazonicum* Goeldi, 1905, whether deposited in the British Museum (Natural History), Naturhistorisches Museum Bern or elsewhere, and all subsequent designations of lectotypes from among those syntypes;
 - (b) to designate the reared female specimen of *S. amazonicum* whose data follows, deposited in the British Museum (Natural History), as neotype. (*S. amazonicum* Goeldi, female, with associated pupal pelt. BRAZIL: Amazonas, Bom Lugar, R. Purus. 8°42'S 67°22'W. 22.xi.1977. (A.J. Shelley)).
- (2) to place the specific name *amazonicum* Goeldi, 1905, as published in the binomen *Simulium amazonicum*, and as defined by the neotype designated in (1)(b) above, on the Official List of Specific Names in Zoology.

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